

Amendments to the Claims

Please amend the claims without prejudice, such that this listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

1 - 3. (CANCELLED)

4. (NEW) A method of detecting airborne acoustic waves, propagating within a given region to be monitored, the method comprising:

projecting at least one coherent light beam along a selected line associated with said region, wherein the airborne acoustic waves traverse said line and modulate said first beam; and,

intercepting said coherent light beam to provide an electrical signal representative of the airborne acoustic waves to be detected.

5. (NEW) The method of Claim 4, further comprising:

projecting at least a second coherent light beam along a second line relatively transverse to said select line, wherein the airborne acoustic waves further traverse said second line and modulate said second beam; and,

intercepting said second coherent light beam to provide an electrical signal representative of the airborne acoustic waves to be detected.

6. (NEW) The method of Claim 4, wherein the region corresponds to a predetermined area located on the ground, and including first and second receiver and reflector pairs each being associated with one of said coherent light beams.
7. (NEW) The method of Claim 4, wherein said first and second reflectors comprise retro-reflectors.
8. (NEW) The method of Claim 4, wherein said first and second reflectors comprise speckled retro-reflectors.
9. (NEW) The method of Claim 4, wherein said first and second coherent light beams comprise pulsed beams.
10. (NEW) The method of Claim 4, wherein said first and second coherent light beams comprise laser beams.
11. (NEW) The method of Claim 4, wherein the acoustic waves to be detected comprise sound waves indicative of speech.
12. (NEW) The method of Claim 4, wherein said electrical signal representative of said acoustic waves is indicative of the amplitude and phase of the acoustic waves to be detected.

13. (NEW) A method of detecting airborne acoustic waves propagating in a preselected area of interest, the method comprising:

placing transceiver/reflectors substantially near at least two edges of the area of interest;

projecting at least one beam of coherent light from one of said transceiver/reflectors to impinge another of said transceiver/reflectors; and,

reflecting said projected at least one beam back to said projecting transceiver/reflector using said other of said transceiver/reflectors to enable said projecting transceiver/reflector to detect modulation on said reflected beam due to the interaction of the acoustic waves on said projected and reflected at least one beam.

14. (NEW) The method of Claim 13, wherein said area is substantially rectangular, and said transceiver/reflectors are placed substantially near corners thereof.

15. (NEW) A sensing system for sensing airborne pressure waves, comprising:

a laser for projecting a beam through said airborne pressure waves;
a reflector positioned to receive and reflect said projected beam; and,
a detector for receiving said reflected beam and providing at least one output signal representative of said airborne pressure waves.

16. (NEW) The sensing system of Claim 15, wherein said reflector comprises a specular reflecting surface.

17. (NEW) The sensor of Claim 15, wherein said detector comprises a heterodyne detector.

18. (NEW) The sensor of Claim 15, wherein said reflector comprises a retro-reflecting surface.

19. (NEW) A sensor for optically sensing airborne acoustic waves in a given area, comprising:

a laser for projected a beam into said area to cause said airborne acoustic waves to phase modulate said coherent beam;

an optical detector responsive to said modulated beam and said projected beam to provide a heterodyne signal; and,

a phase detector for receiving said heterodyne signal, detecting the airborne acoustic induced phase variation and providing an electrical signal representative of the acoustic waves.

20. (NEW) A sensor for sensing airborne acoustic waves, comprising:

a laser for projecting a beam to cause said airborne waves to modulate said beam; and,

means for receiving said modulated beam and to provide a signal indicative of said airborne waves.